Location/Identification

MINFILE Number: 104K 009
National Mineral Inventory Number: 104K11 Ag1
Name(s): **ERICKSEN-ASHBY**
APEX-BADGER, ERICKSON-ASHBY, ASHBY
Status: Developed Prospect
Mining Division: Atlin
Electoral District: Stikine
Regions: British Columbia
Resource District: Skeena Stikine Natural Resource District
BCGS Map: 104K063
NTS Map: 104K11W
UTM Zone: 08 (NAD 83)
Latitude: 58 39 29 N
Northing: 6502983
Longitude: 133 28 30 W
Easting: 588477
Elevation: 876 metres
Location Accuracy: Within 500M
Comments: Located on the south side of the Taku River, on the north ridge of Mount Ericksen. The property includes Maidas (MINFILE 104K 020).

Mineral Occurrence

Commodities: Silver, Lead, Zinc, Gold, Rhodonite

Minerals
Significant: Sphalerite, Galena, Argentite, Freibergite, Pyrite, Magnetite, Pyrrhotite
Alteration: Magnetite, Garnet, Rhodonite, Diopside, Tremolite
Alteration Comments: Rhodonite and magnetite are found in abundant small skarns near the massive sulphides.
Alteration Type: Skarn, Pyrite
Mineralization Age: Tertiary
Dating Method: Lead/Lead
Material Dated: Galena, Zircons

Deposit
Character: Podiform, Stratabound, Massive, Discordant
Classification: Skarn
Type: K02: Pb-Zn skarn

Comments: Also Uranium/Lead method used for dating.

Host Rock

Dominant Host Rock: Metasedimentary

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Eocene	Sloko	Unnamed/Unknown Formation	------
Upper Paleozoic	------	------	Stikine Assemblage
Tertiary	------	------	Unnamed/Unknown Informal

Isotopic Age	Dating Method	Material Dated
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Lithology: Skarn, Limestone, Chert, Rhyolite, Basaltic Tuff, Porphyritic Quartz Monzonite, Andesite, Basalt, Greywacke, Gabbro
Comments: Also the Eocene Ericksen Sill.

Geological Setting

Tectonic Belt: Coast Crystalline
Physiographic Area: Boundary Ranges
Terrane: Stikine
Metamorphic Type: Contact, Regional

Comments: Regionally, greenschist grade and lower.

Inventory

Ore Zone: ERICKSEN-ASHBY
Year: 1964
Category: Indicated
Report On: Y
Quantity: 907,100 tonnes
NI 43-101: N

Commodity	Grade
Silver	214.9000 grams per tonne
Lead	2.2300 per cent
Zinc	3.7900 per cent

Comments: Year of reserves is questionable.

Reference: Vancouver Stock Exchange Application for Listing 142/80.

Capsule Geology

The Ericksen-Ashby deposit is located on the sharp northern ridge of Mount Ericksen, about 64 kilometres east of Juneau, Alaska and 130 kilometres south of Atlin.

The Ericksen-Ashby area is underlain by Upper Paleozoic Stikine assemblage rock. These are overlain to the east by felsic volcanics and sedimentary rocks of the Eocene Sloko Group. Paleocene to Eocene feldspar porphyry dikes of the Sloko-Hyder plutonic suite intrude the strata.

The area underlying Mount Ericksen consists of Late Carboniferous to Permian volcanosedimentary strata of the Stikine Assemblage. According to Mihalynuk (Fieldwork 1995), the strata are predominantly pyroxene-phyric andesite or basaltic andesite and gabbro. Near the north end of the ridge, the volcanic strata are interrupted by two interlayers comprised of chert and carbonate. They are approximately 100 metres thick due to folding which obscures the original stratigraphic thickness. The structurally highest sedimentary unit bifurcates northward to envelop andesite of approximately the same thickness. It also includes a thin layer of rhyolite. A subjacent, tabular, porphyritic quartz monzonite, 50 to 100 metres thick (and up to 350 metres thick locally), known as the Ericksen sill, thermally metamorphoses the entire section on Mount Ericksen.

Mineralization occurs within at least thirteen different zones, each of which contains one or more discontinuous lens-shaped bodies of disseminated to massive sulphide (Payne, 1979 (Assessment Report 7707)). The sulphides are mostly a mixture of pyrrhotite, sphalerite, pyrite and galena. The skarn mineralogy typically consists of rhodonite, diopside, tremolite and magnetite. All massive sulphide mineralization of economic interest occurs in the upper sedimentary division (SED-2 of Payne, 1979). Within SED-2, sulphide layers with high zinc, lead and silver contents occur above the discontinuous rhyolite layer. Some sulphide pods and lenses are discordant, clearly related to late skarn alteration and/or remobilization of the stratiform sulphides.

The property is divided into two structural blocks by a major fault, called the Bracken fault which strikes north-northwest and is thought to be related to a regional fault system in the Taku River area. A small subsidiary fault occurs just northwest of Bracken fault, and is called Zone 8A fault. Also, a minor north-northwest trending fault occurs within epidotized andesites/basalts south of the mineralized zones.

South of the Bracken fault, which includes Zones 1, 2, 2S, 2N and the Glory Hole, mineralization occurs with and possibly related to the major footwall rhyolite. A typical stratigraphic section consists of a lower zone of rhyolite and pyritic rhyolite, overlain by more pyritic rhyolite with lenses of massive pyrite and of magnetite, which in turn, is overlain by massive sulphides. Commonly, galena and sphalerite are concentrated towards the top of the massive sulphide section. Silver minerals reported include argentite, freibergite and argentiferous galena. Rhodonite and magnetite are abundant in small skarns near the rhyolite and massive sulphides.

Drilling in 1981 within Zone 1 indicated ore grade material extends to depth. Mineralization consists of massive sulphides which are roughly lensoid or podiform and plunge about 20 degrees south. The zones of mineralization all occur near the unconformable contact of a slightly metamorphosed, occasionally brecciated limestone-chert sequence with a massive basaltic tuff unit. Rhyolite occurs near the unconformable contact, and dips about 75 degrees southwest and strikes northwest. Mineralization is found in a rhyolite breccia with the matrix that surrounds altered fragments which include chert, andesite and limestone. Locally, garnetiferous zones occur within the breccia. In 1981, drillhole No. 3 intersected 20.2 metres which assayed 567.1 grams per tonne silver, 4.94 per cent lead and 4.22 per cent zinc; drillhole No. 4 intersected 5.1 metres which assayed 627.4 grams per tonne silver, 6.42 per cent lead and 6.2 per cent zinc (Assessment Report 10026). High gold values of up to 1.37 grams per tonne across 3 metres were reported in 1963 from Zone 2 (Assessment Report 543). Encouraging gold values were obtained from several locations south of Zone 2S and include values of 26,200 and 2320 parts per billion, respectively from silicified andesite and skarn outcrops (Assessment Report 17310).

North of the Bracken fault, the lithologies are predominantly chert, limestone, and hornfelsed siltstone. Mineralization is associated with cherts and limestones. This mineralization generally contains massive sulphide zones with lower grades. In 1981, a 15.1 metre drill intersection in mineralized

cherts in Zone 8 assayed 173.1 grams per tonne silver, 1.2 per cent lead and 1.37 per cent zinc (Assessment Report 10026).
In 1964, indicated reserves were reported to be 907,100 tonnes grading 214.9 grams per tonne silver, 2.23 per cent lead and 3.79 per cent zinc (year of reserves is reported to be questionable) (Vancouver Stock Exchange Application for Listing 142/80). This resource estimate was calculated prior to the implementation of National Instrument 43-101 and is not compliant with those standards.

Massive sulphide mineralization at the Ericksen-Ashby has been referred to as both skarn-related and as volcanogenic in origin. Field evidence has predominantly pointed to a volcanogenic origin for the deposit. Like the volcanogenic massive sulphides to the immediate north (e.g. Tulsequah Chief), it is closely associated with a felsic tuff horizon. Mineralization is dominantly stratiform and mainly restricted to the single SED-2 interval (Payne, 1979). Furthermore, a lithologically similar calcareous layer between SED-2 and the Ericksen sill is un-mineralized although, given its closer proximity to the intrusion, it would seem a more likely host for skarn mineralization. Thus, Payne interpreted the Ericksen-Ashby as primarily a volcanogenic massive sulphide deposit with partial late remobilization due to the Ericksen sill. However, while Mihalynuk et al. (Fieldwork 1994) reported that field observations were consistent with those of Payne and his volcanogenic interpretation, subsequent isotopic dating of lead from galena taken from the massive sulphide lenses were incompatible with the Paleozoic age of the enclosing volcanics and are in keeping with 53.7 +/- 0.7 Ma (Tertiary) age of the Ericksen sill as derived through U-Pb geochronology dating (Fieldwork 1995)..

Work History
The Ericksen-Ashby claim group was initially staked in 1929 by Charles Ericksen and “Chuck” Ashby and a small adit was reported to have been started. Prior to 1950, several other prospectors including Harry Bracken from Juneau had visited the property for assessment work on one or more of the showings. Up to that time little had been recorded in terms of mapping and sampling. In 1950, the property was optioned by Cominco and held as the Badger 1-5, Apex 1-7 and Badger Extension 1-5 claims. In 1951, W.T. Irvine on behalf of Consolidated Mining and Smelting (Cominco) reported on a geological mapping program.

Bernius (Assessment Report 543)) reported that in 1950 and 1951 Cominco had sampled the property and drilled one hole 324 metres long in the east side of the mountain below the Glory Hole area. The hole went through 243.8 metres of quartz monzonite before intersecting limestone and was abandoned when a rock avalanche destroyed the drill platform and supplies. Cominco’s results were inconclusive. Between 1953 and 1962 several parties performed annual assessment work.

In 1963, the Ericksen-Ashby Mining Company was formed and conducted more surface exploration directed largely at Zone 8. Assessment Report 543 by G.R. Bernius reports work done during the 1963 field season by Terratest Co. Ltd. The work outlined seven individual showings that make up the Ericksen-Ashby property and designated Zones 1 to 8 (Assessment Report 543):
Zone No. 1 is a massive to fine-grained galena and sphalerite occurrence that was previously known as the ‘Main Showing’. Identified over an 8 metre width, some samples yielded high assays of 1203 grams per tonne silver, 23.23 per cent zinc, 20.24 per cent lead and 0.69 gram per tonne gold.
Zone No. 2, previously known as “Glory Hole”, was difficult to access and consequently only sampled at the north end. Grab samples from the mineralized zone, 5 to 7 metres wide, of fine-grained pyrite, sphalerite, galena and quartz were assayed yielding 1.13 grams per tonne gold, 144.0 grams per tonne silver, 2.14 per cent lead and 5.46 per cent zinc.
Zone No. 3 was reported to be fairly massive, fine-grained galena, sphalerite, manganite, and quartz. Samples are fairly representative over 1.5 metres assaying 0.69 gram per tonne gold, 411.43 grams per tonne silver, 2.89 per cent lead, and 10.0 per cent zinc.
Zone No. 4 showed a change in character of mineralization as it cuts across the stratified limestone and therefore may be associated with a Tertiary dike. Small isolated samples were found to contain galena, but they were not large enough to warrant assaying.
Zone No. 5 as seen on the map contains mostly pyrite and rhodonite scattered within large areas of fractured limestone. Careful examination has detected small exposures rich in sphalerite, and galena. These areas have yielded high silver assays up to 3387.46 grams per tonne and lead and zinc values of 32.46 per cent and 6.68 per cent, respectively.
Zone No. 6 appeared to contain the same mineralization as No. 1 and No. 2 and may be an offshoot of these zones. Zone No. 6 appeared to contain the same mineralization as No. 1 and No. 2 and may be an offshoot of these zones.
Zone No. 7 is on a steep slope, where a gossan indicates a predominance of pyrite and manganite.

In 1964, the new company drove an adit southeasterly adjacent to Zones 3 and 13 that were exposed at surface. A sulphide-rich skarn zone was intersected in the adit (Zone 9). Eight or nine underground diamond-drill holes were reported to have been drilled from the end of the adit into the skarn zone. The program ended because of a lack of water for drilling. Also in 1964, indicated reserves were reported to be 907,100 tonnes grading 214.9 grams per tonne silver, 2.23 per cent lead and 3.79 per cent zinc; the year of the reserves is questionable (Vancouver Stock Exchange Application for Listing 142/80). These “reserves” were calculated prior to the implementation of National Instrument 43-101. Work in 1965 included trenching in Zones 5, 8, 8A, 10, 11 and 12 in the northern half of the property. A self-potential (SP) survey outlined several small anomalies between Zones 8 and 11. The ground lapsed between the years 1966 and 1975 and there is no record of work. The property was restaked by Gerry Rayner in 1976 who subsequently optioned it to Anglo Canadian Mining.

In 1979, Dr. John Payne mapped the Ericksen-Ashby deposit for Semco Mining Corporation (Anglo Canadian) (Assessment Report 7707). Payne further outlined some of the zones not previously defined by Bernius in 1963, and these are designated Zones 8 to 13:
Zone No. 8 consists of skarn in limestone or brecciated chert and contains pods and patches of massive sulphide such as pyrrhotite, sphalerite, galena, stibnite and pyrite. The skarn assemblage may also include rhodonite, hornblende, actinolite, pyroxene and tremolite.
Zone No. 8a occurs in a complexly folded region along a chert-limestone contact; limited outcrop makes it impossible to determine which contact the

zone occurs in. The data suggests that it is along the upper contact of the lower chert unit. Skarn with rhodonite, pyroxene, magnetite and pyrrhotite occur with sphalerite and galena.
Zone No. 9 is a blind zone intersected by the adit. It consists of a skarn up to 1.5 metres wide over a strike length of 36.6 metres. The zone consists of skarn and chert breccia enclosed mainly in light grey to cream chert. The skarn consists mainly of rhodonite and pyrrhotite, with moderately abundant sphalerite and galena. Diopside, hornblende, and magnetite occur in some samples; mineralogy is very similar to that in Zone 3. Sphalerite and galena occur locally in fractures in brecciated chert, and form scattered pods and patches of high-grade mineralization in the breccia.
Zone No. 10 consists of chert breccia with rhyolite containing irregular patches and veins of skarn, and a few crosscutting andesite dikes. Skarn consists mainly of rhodonite, with locally abundant pyrrhotite, and minor hornblende and sphalerite. A 2-metre sample yielded 0.17 gram per tonne gold, 96 grams per tonne silver, 2.3 per cent lead and 3.3 per cent zinc.
Zone No. 11 comprises chert, chert breccia, and minor limestone and skarn. The skarn zones are patchy and irregular in outline, some cutting sharply across bedding. Most skarn consists of rhodonite and lesser pyrrhotite, or just rhodonite, with minor sphalerite.
Zone No. 12 is reported to be similar to that of Zone 11 with scattered skarn zones in chert and chert breccia, and with thin interbeds of limestone. Sulphides are mainly pyrrhotite with local sphalerite and galena.
Zone No. 13 consists of a large number of skarns between Zones 1 and 3. These skarns are less than 3 metres across, with the largest being about 10 metres. Most skarns are siliceous with abundant rhodonite, scattered but common magnetite and scattered sulphides. Sphalerite and galena are very abundant in Zone 13-1 and form a few patches elsewhere in the skarns. Zone 13-1 is a narrow replacement body consisting of massive sulphide and skarn in the eastern part and mainly of silica and sulphide-poor skarn in the west. Actinolite, diopside and garnet are common. One chip sample over 4.3 metres yielded 0.34 gram per tonne gold, 230 grams per tonne silver, 3.8 per cent lead and 13.9 per cent zinc.
Zones 1, 2 and 4 occur in the Footwall Rhyolite. Payne explained that massive sulphides were formed from exhalite solutions related genetically to the rhyolite; most massive sulphides occurring near the upper stratigraphic contact of the rhyolite were probably formed by precipitation at the seawater interface. Zones 3, 5, 6, 8, 9, 10, 11, 12 and 13 occur in the chert or chert breccia. Skarn and minor massive sulphide zones, containing locally high contents of lead, zinc and silver, are associated with chert, chert breccia, and minor limestone with very little to no rhyolite. Payne considered them to have formed at or near exhalite centres on a relatively stable limestone platform. Silica-rich solutions replaced limestone irregularly near the vents, and formed massive to slightly bedded chert along the seawater interface. Continued tectonic activity produced brecciation of some chert in the vent areas. During later exhalative activity, sphalerite and galena were deposited in the brecciated chert along fractures and in small replacement patches, and in places chert and chert breccia and lesser limestone were replaced by skarn.

In 1980, Anglo Canadian attempted to diamond drill Zone 1 on a relatively steep slope above the underground workings but was unsuccessful due to loss of surface water for drilling. In 1981, the property was optioned to Island Mining and Exploration who subsequently drilled six holes beneath Zone 1 from a single setup and also drilled five other holes to test Zones 3 and 8 (Assessment Report 10026). The first four holes on Zone 1 were drilled to the north-northeast to east-northeast, all intersecting a zone of mineralization. Hole 3 intersected 20.2 metres of mineralization with the best section from 33.5 to 42.7 metres assaying 4.94 per cent lead, 4.22 per cent zinc, and 567.1 grams per tonne silver. Hole 4 intersected 5.1 metres of mineralization, including a section from 27.1 to 30.1 metres which assayed 6.4 per cent lead, 6.20 per cent zinc, and 627.4 grams per tonne silver. Holes 5 and 6 intersected only minor mineralization.

In 1987, Northwind Ventures Ltd. of Calgary optioned the Ericksen-Ashby property (EA claims) and purchased the surrounding BC and Bear claims at the same time. The 1987 exploration program as reported by (Assessment Report 17310) consisted of creating two flagged grids, soil geochemical sampling, geological mapping (1:1250 scale), and VLF-EM surveying. In addition, reconnaissance geological mapping, stream silt sampling, and detailed lithogeochemical sampling of gossans were also completed outside the grid area. Re-sampling of several old trenches and sampling of gossanous areas was completed in the area southeast of the adit.

In 1988, work by Taiga Consultants Ltd. for Northwind Ventures consisted of a comprehensive exploration program which included a collection of 175 rock and 252 soil samples for geochemical analysis (Assessment Report 17310).

In 1990, an airborne helicopter-borne frequency domain electromagnetic survey was flown for KRL Resources Corp (Assessment Report 20096).

In 1996, Mihalynuk et al. published an article which showed that isotopic dating of lead taken from the Ericksen-Ashby galena-rich sulphides were Tertiary in age (Fieldwork 1995).

In 1998, Xplorer Gold Corporation conducted prospecting and geological assessment on the Erik 1, Erik 2 and Erik 3 claim blocks (Assessment Reports 25186).

In the early to mid 2000s, the Ericksen-Ashby area was staked as part of the Taku property owned by Optima Minerals Inc. The property was visited and various zones were sampled by Optima Minerals (2007?) though this work was never published (Personal Communication, Garry Payie).

Bibliography

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PERS COMM Garry Payie
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Date Coded:	1985/07/24	**Coded By:**	BC Geological Survey (BCGS)	**Field Check:**	Y
Date Revised:	2021/04/14	**Revised By:**	Bruce Northcote (BN)	**Field Check:**	Y